INTERNATIONAL STANDARD

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Fluid power systems — O-rings —

Part 1:
Inside diameters, cross-sections, tolerances and designation codes

Transmissions hydrauliques et pneumatiques — Joints toriques —

Partie 1: Diamètres intérieurs, sections, tolérances et codes d'identification dimensionnelle

Reference number
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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 3601-1 was prepared by Technical Committee ISO/TC 131, *Fluid power systems*, Subcommittee SC 7, *Sealing devices*.

This fourth edition cancels and replaces the third edition (ISO 3601-1:2002), which has been technically revised.

ISO 3601 consists of the following parts, under the general title *Fluid power systems — O-rings*:

- *Part 1: Inside diameters, cross-sections, tolerances and designation codes*
- *Part 2: Housing dimensions for general applications*
- *Part 3: Quality acceptance criteria*
- *Part 4: Anti-extrusion rings (back-up rings)*
- *Part 5: Suitability of elastomeric materials for industrial applications*

Introduction

In fluid power systems, power is transmitted and controlled through a fluid (liquid or gas) under pressure within an enclosed circuit. To avoid leakage or to seal different chambers of a component from each other, sealing devices are used. O-rings are one type of sealing device.

Fluid power systems — O-rings —

Part 1:
Inside diameters, cross-sections, tolerances and designation codes

1 Scope

This part of ISO 3601 specifies the inside diameters, cross-sections, tolerances and designation codes for O-rings used in fluid power systems for general industrial and aerospace applications.

The dimensions and tolerances specified in this part of ISO 3601 are suitable for any elastomeric material, provided that suitable tooling is available.

NOTE The tooling most commonly available is based on 70 IRHD NBR shrinkage rates (see ISO 48). For materials that shrink differently from this standard NBR compound, a special mould can be required to maintain the mean diameters and the tolerance limits listed.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 48, *Rubber, vulcanized or thermoplastic — Determination of hardness (hardness between 10 IRHD and 100 IRHD)*

ISO 3601-3, *Fluid power systems — O-rings — Part 3: Quality acceptance criteria*

ISO 5598, *Fluid power systems and components — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5598 apply.

4 Symbols

The following symbols are used in this part of ISO 3601:

— d_1 O-ring inside diameter;

— d_2 O-ring cross-section diameter.